

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/571,315
Attorney Docket No.: 029929-00025

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1-8. (Canceled)

9. (Currently Amended) A method for the preparation of metal nano-particles comprising the steps of dissolving, in a non-polar solvent, one of an organic metal compound of a fatty acid ~~as set forth in claim 4~~, a metal complex of an amine wherein the amine is an aliphatic amine having a linear or branched structure or a mixture of the organic metal compound and the metal complex, and adding a reducing agent to the resulting liquid in order to reduce the liquid to thus give metal nano-particles,

additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas,

after the adding the reducing agent, adding deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced.

10. (Canceled)

11. (Canceled)

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12. (Previously Presented) The method for the preparation of metal nano-particles as set forth in claim 9, wherein the size of the metal nano-particles is not less than 1 nm and not more than 100 nm.

13. (Currently Amended) ~~A metal nano-particle-containing dispersion characterized in that the The method for the preparation of metal nano-particles as set forth in claim 9, further including the steps of dispersion is obtained by concentrating the dispersion mixture containing the metal nano-particles prepared according to the method as set forth in claim 9 and then re-dispersing the metal nano-particles, to thus control a concentration thereof to a level of not less than 5% by mass and not more than 90% by mass.~~

14-20. (Canceled)

21. (New) The method for the preparation of metal nano-particles as set forth in claim 9, wherein the organic metal compound is adhered to the periphery of each metal nano-particle as a dispersant, and

wherein the organic metal compound is an organic metal compound of a fatty acid, a metal complex of an amine or a mixture of an organic metal compound of a fatty acid and a metal complex of the amine.

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22. (New) The method for the preparation of metal nano-particles as set forth in claim 21, wherein the fatty acid is at least one member selected from the group consisting of C₆ to C₂₂ saturated fatty acids and unsaturated fatty acids, each having a linear or branched structure.

23. (New) The method for the preparation of metal nano-particles as set forth in claim 21, wherein the fatty acid is at least one fatty acid selected from the group consisting of hexanoic acid, heptanoic acid, octanoic acid, nonanoic acid, decanoic acid, undecanoic acid, dodecanoic acid, tetra-decanoic acid, eicosanoic acid, docosanoic acid, 2-ethyl hexanoic acid, oleic acid, linoleic acid and linolenic acid.

24. (New) The method for the preparation of metal nano-particles as set forth in claim 21, wherein the amine is an aliphatic amine having a linear or branched structure.

25. (New) The method for the preparation of metal nano-particles as set forth in claim 24, wherein the amine is at least one member selected from the group consisting of hexylamine, heptylamine, octylamine, decylamine, dodecylamine, 2-ethyl-hexylamine, 1, 3-dimethyl-n-butylamine, 1-amino-undecane and 1-amino tridecane.

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26. (New) A method for the preparation of a metallic wire or a metal film comprising the steps of coating, onto the surface of a base material a dispersion containing metal nano-particles prepared by dissolving, in a non-polar solvent, an organic metal compound of a fatty acid wherein the fatty acid is at least one member selected from the group consisting of C₆ to C₂₂ saturated fatty acids and unsaturated fatty acids, each having a linear or branched structure, a metal complex of an amine wherein the amine is an aliphatic amine having a linear or branched structure or a mixture of the organic metal compound and the metal complex, and adding a reducing agent to the resulting liquid in order to reduce the liquid to thus give metal nano-particles,

additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas,

after the adding the reducing agent, adding deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced.

27. (New) The method for the preparation of a metallic wire or a metal film as set forth in claim 26, wherein the temperature of the firing step ranges from 140 to 300°.

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28. (New) A metallic wire prepared according to the method as set forth in claim 26.

29. (New) A metal film prepared according to the method as set forth in claim 26.

30. (New) A method for the preparation of a metallic wire or a metal film comprising the steps of coating, onto the surface of a base material, a dispersion prepared by a method comprising the steps of dissolving, in a non-polar solvent, one of an organic metal compound of a fatty acid wherein the fatty acid is at least one member selected from the group consisting of C₆ to C₂₂ saturated fatty acids and unsaturated fatty acids, each having a linear or branched structure, a metal complex of an amine wherein the amine is an aliphatic amine having a linear or branched structure or a mixture of the organic metal compound and the metal complex, and adding a reducing agent to the resulting liquid in order to reduce the liquid to thus give metal nano-particles and then re-dispersing the metal nano-particles, to thus control a concentration thereof to a level of not less than 5% by mass and not more than 90% by mass,

additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas,

after the adding the reducing agent, adding deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand

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so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced.

31. (New) The method for the preparation of a metallic wire or a metal film as set forth in claim 30, wherein the temperature of the firing step ranges from 140 to 300°.

32. (New) A metallic wire prepared according to the method as set forth in claim 30.

33. (New) A metal film prepared according to the method as set forth in claim 30.

34. (New) A method for the preparation of a metallic wire or a metal film comprising the steps of coating, onto the surface of a base material, a metal nano-particle-containing dispersion prepared by a method comprising the steps of dissolving, in a non-polar solvent, one of an organic metal compound of a fatty acid wherein the fatty acid is at least one member selected from the group consisting of C₆ to C₂₂ saturated fatty acids and unsaturated fatty acids, each having a linear or branched structure, a metal complex of an amine wherein the amine is an aliphatic amine having a linear or branched structure or a mixture of the organic metal compound and the metal complex, and adding a reducing agent to the resulting liquid in order to reduce the liquid to thus give metal nano-

particles and then again dispersing the metal nano-particles to thus give a dispersion of metal nano-particles having a metal nano-particle concentration of not less than 5% by mass and not more than 90% by mass, followed by drying and then firing the coated layer of the dispersion to thus form a thin metallic wire or a metal film having conductivity,

additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas,

after the adding the reducing agent, adding deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced.

35. (New) The method for the preparation of a metallic wire or a metal film as set forth in claim 34, wherein the temperature of the firing step ranges from 140 to 300°.

36. (New) A metallic wire prepared according to the method as set forth in claim 34.

37. (New) A metal film prepared according to the method as set forth in claim 34.